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ABSTRACT

The American College Testing Program (ACT) developed tests as a result of the College Outcome Measures Project (COMP). These instruments were intended for evaluation of nontraditional and traditional postsecondary education programs. They measure skills rather than information. The study was designed to check on several aspects of use of the COMP objective test with nontraditional graduates. The degree programs assessed were University Without Walls (UWW), Kaskaskia, and Board of Governors Bachelor of Arts Degree (BOG/BA). Students graduating from the Kaskaskia program most resemble traditional students, followed by BOG graduates and then UWW graduates. A norm reference group supplied by ACT was used for comparison of scores obtained by traditional seniors. The COMP objective test was shown to have equally high reliability for traditional and nontraditional students. The nontraditional students who participated in the study perceived the COMP test as appropriate for measuring their competencies. Minority graduates perceived the test as culture fair. The COMP test seemed to be a good instrument for demonstrating the quality of the product of nontraditional postsecondary educational programs. (DWH)

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The ACT College Outcomes Measurement Project: A New Tool for Summative Evaluation of Nontraditional Postsecondary Education Programs?¹

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An increasingly important problem in evaluating nontraditional programs concerns the quality of the students graduating from such programs. In particular, the concern is that students in nontraditional programs are not learning as much as those in traditional settings. In a recent study (Pringle and Ward, 1981) 78% of the faculty at twelve institutions believed that it was possible for a student to acquire the competence appropriate for a bachelor's degree without spending four years in a college setting. At the same time, 70% disagreed with the notion that nontraditional programs at their institutions maintained the same academic standards as the rest of the university. Only 40% thought that a non-traditional degree should be considered the equivalent of a traditional degree. These figures illustrate the concern of faculty with the product of nontraditional programs; the implication being that with less rigorous academic standards (as perceived by the faculty) the graduate was less educated. This perception by the faculty is also demonstrated by Meyer's (1975) report that faculty would prefer much more stringent measures for evaluating off-campus or experiential education than are used in on-campus courses. This concern may be reasonable because maintaining standards is much more difficult in external and competency based programs than in fifty minute classes with exams and quarterly grades (O'Neil, 1975).

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One way to compare standards for traditional and nontraditional programs might be to use some standardized measure of achievement on graduates from both and see how they compare. The flaw in the simplicity of this solution lies in the fear that such measures may be unfair to the nontraditional students. Evaluators of nontraditional programs insist that evaluations must consider the nature and purpose of the programs and the nature of the students before deciding on appropriate measures. They contend that exams such as the Graduate Record Exam might be biased against nontraditional students because such exams assume certain constancies in curriculum and educational goals that may not apply to graduates of nontraditional programs (Pringle and Ward, 1981). This sort of argument could go on endlessly unless a different sort of standardized measure were available. A possible candidate is a new test devised by the American College Testing Program.

The test is a result of the College Outcome Measures Project (COMP) begun by ACT in 1976. The COMP instruments were intended, in part, to better serve adult, minority, or other nontraditional student populations by concentrating on skills needed for adequate adult functioning in modern society rather than concentrating on an informational base that is tied to a presumed curriculum. The COMP instruments purport to measure skills instead of information. Assessment of the skills necessary for adult functioning seems to be a fair goal for evaluation of both traditional and nontraditional educational programs and is in complete agreement with the goals of nontraditional programs in general.

The present study was designed to see how graduates from three nontraditional programs at five universities compared to graduates of traditional programs on one of the COMP measures. Specifically, we wished to check on four aspects of the use of COMP on nontraditional graduates:

- 1) Is the COMP test reliable for use with nontraditional students?

- 2) Do nontraditional graduates perform as well as traditional students on the test?
- 3) Is the Comp test sensitive enough to discriminate between performance levels of students in different programs or at different universities? and
- 4) Does the test seem applicable (does it have face validity) as perceived by the nontraditional graduates?

PROCEDURE

Instrument. Although several COMP instruments are available, the COMP Objective Test was chosen for this study as it is less expensive, less time consuming, and less complex to administer and score than the Composite test. The COMP Objective Test consists of fifteen activities based on realistic materials drawn from the adult public domain. These activities require subjects to apply general knowledge and skills to information, problems, and issues that are commonly confronted by adults in our society. All questions are in a multiple choice format which presents four alternatives for each item, two of which are true and two of which are false. Each item is scored on a scale from -2 to +2 in order to correct for guessing. The stimuli used in different forms of the objective test vary from form to form but cover the same content areas and use similar formats. Examples of the stimuli for the 15 activities taken from several forms of the objective test are listed below:

- 1- View TV (White Collar Rip-off) and answer questions.
- 2- View TV (Food additives) and answer questions.
- 3- View TV (Making Butch Cassidy and the Sundance Kid) and answer questions.
- 4- Read article (The housing slump) and answer questions.
- 5- Read article (Solar heating) and answer questions.
- 6- View proposed design for new building and answer questions.
- 7- Read letter and memo about school soccer program and answer questions.
- 8- Read ad (Myth: Railroads haven't kept up with the times) and answer questions.
- 9- Read short story (A man called Jose') and answer questions.
- 10- Listen to tape of comments on marriage roles and answer questions.

- 11- Listen to taped broadcast (Coal gasification) and answer questions.
- 12- Listen to music proposed for FM station and answer questions.
- 13- Answer questions about organizing a neighborhood group to get stop light installed.
- 14- Answer questions about losing weight.
- 15- View art reproduction and answer questions.

The areas surveyed by the exam are: Functioning in Social Institutions, Using Science and Technology, Using the arts, Communicating, Solving Problems, and Clarifying Values. In addition to scores on these areas a total, or general score is also found for each examinee.

Reliability. For the objective test, ACT reports parallel forms reliability estimates from .70 to .81 for total score and from .39 to .72 for the subtests based on recent results from teaching 969 college seniors. Cronbach alpha estimates of the reliability of the test were .84 for total score and from .54 to .68 for the subtests. The subtests have lower reliability, of course, since they are composed of many fewer items than the total score. The total score reliabilities seem very reasonable although all estimates are based only on traditional college students. No estimates of reliability for nontraditional students were available from ACT before the present study.

Validity. Evidence for the validity of COMP comes from studies demonstrating that COMP scores change with education but not with age, a lack of correlation of COMP scores with Grade Point Averages, and relatively small correlations ($r=.58$) between COMP scores and entering achievement scores (SAT or ACT). In one validity study, two groups of high school seniors matched in terms of sex and ACT Composite score were given the COMP test four years after graduating from high school. One group had attended college, the other group had attended vocational/technical school. Four years after high school the college students were superior on COMP measurement battery (an early edition of the Composite test). In another study it was demonstrated that

COMP scores increase from freshman to senior year with the greatest gains coming in the sophomore year, although correlations with age were close to zero at each grade level. Finally the correlation between COMP and GPA was found to be only .21 (ACT, 1981). It would appear, then, that COMP scores are reasonably reliable, are not related to maturation alone but to educational level, and are measuring something different than is measured by college GPA or standard achievement/aptitude tests.

Subjects. As a part of a previous project, 1,116 graduates of nontraditional programs from the five universities² in the Board of Governors of State Colleges and Universities were surveyed concerning their reasons for enrolling, quality of education, etc. Included in this survey was a request for volunteers to take the COMP test. Initially 204 students replied in the affirmative and 99 actually came to examining sessions held on each campus and at one extension location. If the results of using the COMP objective test on graduates of nontraditional programs are to be generalized beyond the sample of 99 students used we must be reasonably certain that the sample is representative. Table 1 shows demographic data for all graduates of BOG nontraditional programs and for the participants in the COMP test. Examination of the table shows that it is reasonable to assume that the sample accurately represents the larger population in terms of these important characteristics.

Graduates examined in this study received degrees through one of three nontraditional degree programs. A brief description of each program follows.

²The universities in the Board of Governors of State Colleges and Universities system are: Chicago State University, Governors State University and Northeastern Illinois University in the Chicago metropolitan area; Eastern Illinois University in Charleston, Illinois; and Western Illinois University in Macomb, Illinois. The universities are referred to by randomly assigned code letters in the remainder of this paper.

Table 1. Demographic data comparing percentages of all graduates of BOG nontraditional programs with the sample who took the COMP objective test.

	ALL GRADUATES	COMP SAMPLE
AGE		
20-22	1%	2%
23-30	23%	18%
over 30	76%	80%
ETHNIC ORIGIN		
Black	21%	26%
White	75%	73%
Other	4%	1%
UNIVERSITY		
M	27%	26%
N	17%	10%
O	23%	35%
P	12%	9%
Q	21%	19%
PROGRAM		
Kaskaskia	19%	13%
Board of Governors	60%	62%
University Without Walls	21%	24%
SEX		
Male	47%	48%
Female	53%	52%

University Without Walls Program:

Following the model developed by the Union of Experimenting Colleges and Universities, the UWW program is based on the achievement of competencies. This self-paced, interdisciplinary degree program offers to motivated and mature students a wide variety of learning approaches. The UWW student's academic program, which incorporates on-campus and off-campus learning experiences and may include work-related activities and past learning, both formal and informal, is designed by the student in collaboration with academic and community advisors.

Kaskaskia Program:

Many undergraduates seeking a classroom-oriented degree find that no existing major exactly suits their needs. The Kaskaskia Program enables such individuals to develop a multidisciplinary, individually designed degree program under the guidance of a faculty advisor and the director of the program. Since each plan is individualized, there is no prescribed pattern. Most participants are traditionally aged, providing the perspective of a more conventional college student in a nontraditional program.

The Kaskaskia student must meet the University requirements for graduation which include the Basic Curriculum, forty semester hours at the upper division level, a C average, and a minimum of 120 hours.

Admission to the program is by application only. The requirements for admission are a 2.00 minimum GPA, the completion of twenty-four semester hours, and the submission of an acceptable plan. Those students who have beyond 75 semester hours completed must have the approval of the Kaskaskia Committee. The Committee reserves the right to demand higher standards for admission in these instances.

The Board of Governors Bachelor of Arts Degree Program:

The BOG/BA program enables adult part-time students to earn baccalaureate degrees through an alternative and self-paced approach to higher education.

In order to graduate, Board of Governors students must complete specific program requirements: twelve semester hours in social science, twelve in natural science and twelve in humanities. Forty of the hours must be junior-senior level, and fifteen semester hours must be acquired at one or any combination of the five Board of Governors universities.

Requirements are flexible, allowing credit to be transferred from an unlimited number of regionally accredited colleges or universities and to be awarded for prior learning. The fifteen semester hours which must be completed through one or more of the Board of Governors universities may be earned on or off campus, or through correspondence and independent study courses.

Students graduating from the Kaskaskia program most closely resemble traditional students, those graduating from the BOG degree program less closely, and those graduating from the UWW program least resemble traditional students.

Testing. Testing sessions lasting approximately three hours were held on each of the five campuses and at one extension center where many external degree students had taken classes. After each session an informal luncheon was held during which examinees were debriefed and had an opportunity to share opinions of the exam and their experiences since graduating. Tests were scored by ACT. Each examinee received a letter telling him his score and his percentile rank in the group for the total scale and for each of the sub-scales.

RESULTS

Please recall, when reading this section, that the purpose of the various analyses is to help in making decisions about the COMP objective test and not to make decisions concerning particular programs or universities.

Cronbach's alpha was used as the measure of the reliability of the COMP objective test reliability for nontraditional graduates. The coefficients were: .87 for Total score, .68 for Functioning in Social Institutions, .72 for Using Science and Technology, .63 for Using the Arts, .72 for Communicating, .71 for

Solving Problems, and .58 for Clarifying Values. These are very similar to the estimates for reliability supplied by ACT for this test used on college seniors. The COMP objective test is as reliable for use with nontraditional graduates as for use with traditional students.

For comparison with scores obtained by traditional students it was necessary to use a norm reference group supplied by ACT. Time and expense prohibited us from measuring traditional graduates from our own institutions. The norm reference group selected by ACT as being most appropriate for our use was based on 1,886 seniors at 30 colleges and universities in the United States. In common with BOG universities most schools in the norm reference group did not offer doctorate degrees but did offer master's degrees. The mean percentile rank of BOG nontraditional graduates on the COMP objective test for total scale and subtests as compared to the norm reference group is illustrated in Figure 1. Inspection of the figure reveals that performance of the BOG nontraditional graduates was very near the median for traditional college seniors.

The BOG COMP sample was divided according to program. Mean percentile ranks of graduates of the three nontraditional programs are shown in Figure 2 for total score and for each subscale of the COMP objective test. One-way unweighted means analyses of variance with program as the independent variable and score on the COMP objective test as the dependent variable were performed on total scale score and each subtest score.³ When significant F ratios were found, Newman-Keuls tests were performed. Significant effects of program attended were found only for Using Science and Technology ($F=3.81$, $df=2/96$, $p<.05$) and Communication ($F=4.42$, $df=2/96$, $p<.025$). In each of these cases Newman-Keuls tests revealed that Kaskaskia graduates scored significantly higher than UWW graduates at the .05 level.

³Figures show percentile rank as compared to the norm reference group but all analyses were performed on raw scores.

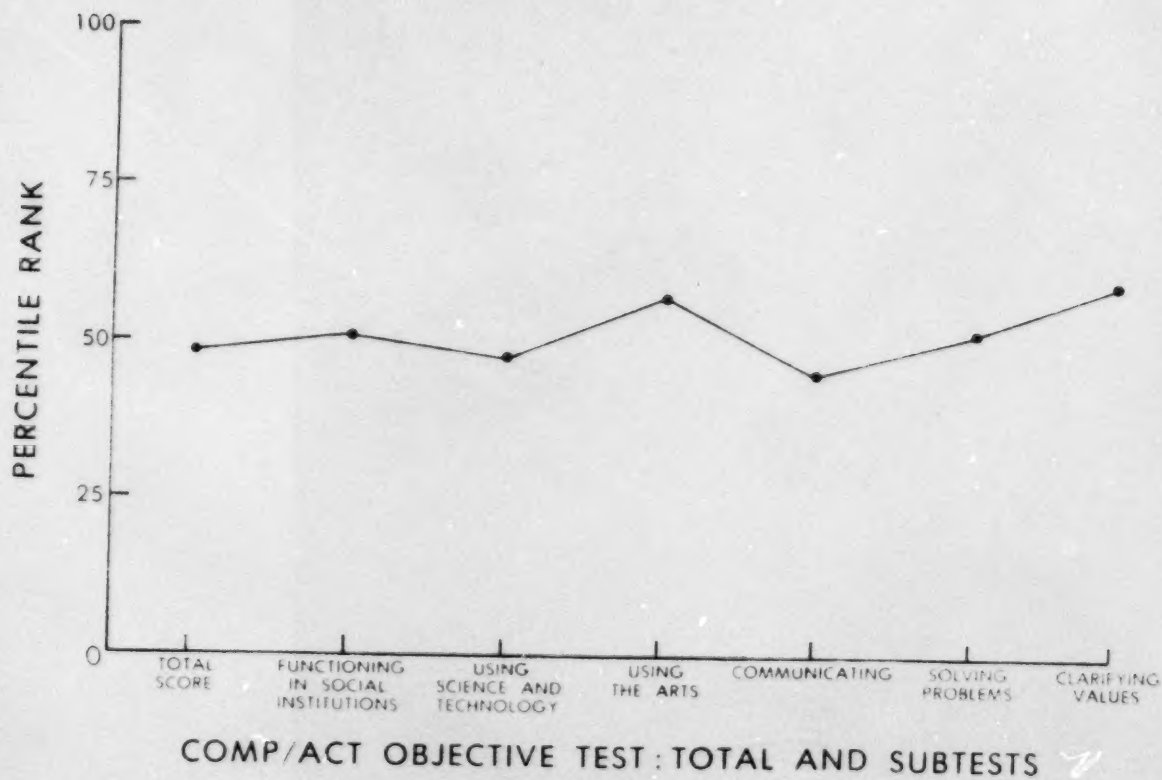
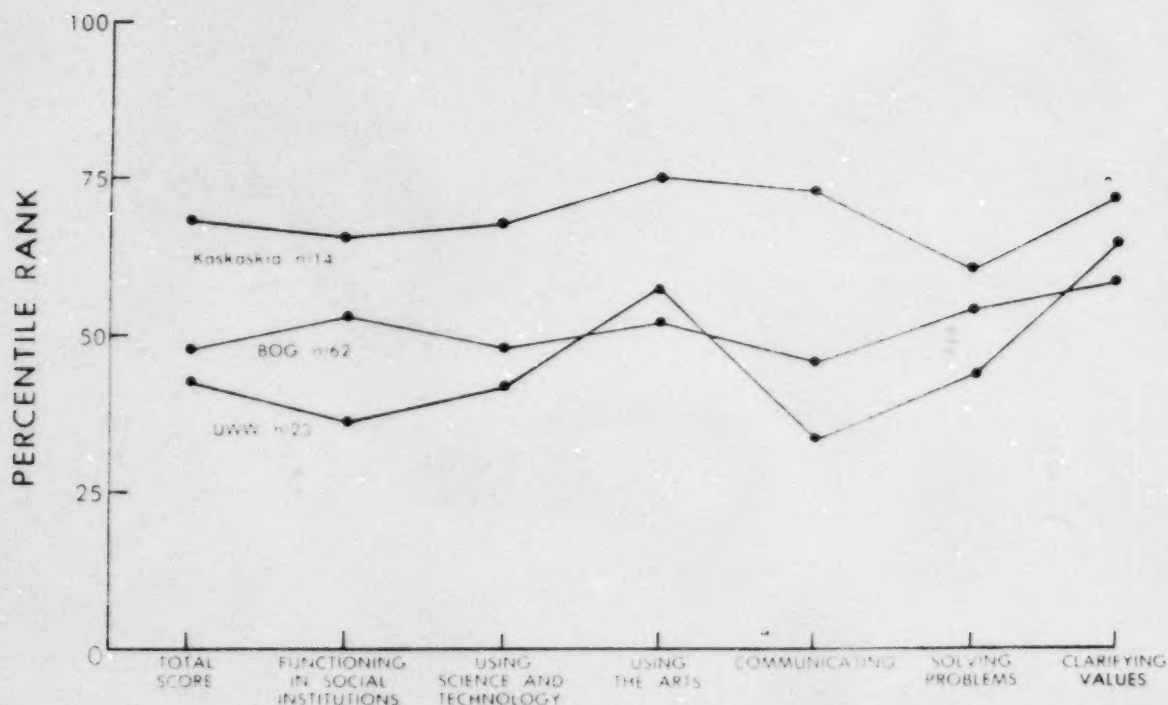


Figure 1. Mean percentile rank of all Board of Governors nontraditional graduates. A sample of 1,886 seniors at 30 colleges and universities for the norm reference group.



COMPACT OBJECTIVE TEST: TOTAL AND SUBTESTS

Figure 2. Mean percentile rank of graduates from each nontraditional program. Scores of 1,886 seniors at 30 colleges and universities form the norm reference group.

A second test of the sensitivity of the COMP objective test scores was performed by dividing the BOG COMP sample according to university. Mean percentile ranks of graduates from the five universities are shown in Figure 3 for total score and for each subscale of the COMP objective test. The five universities are identified only by randomly assigned code letters. The purpose of this analysis is to investigate the sensitivity of the COMP test, not to evaluate programs at the universities. One-way unweighted means analyses of variance with university as the independent variable and COMP objective test score as the dependent variable were performed for total scale score and for each subtest score.³ When significant F ratios were found Newman-Keuls tests were performed. A significant effect of university was found for total score ($F=3.20$, $df=4/94$, $p<.05$). Newman-Keuls tests revealed that university M was superior to university Q ($p<.01$), university O was superior to university Q ($p<.05$) and university N was superior to university O ($p<.01$). A significant effect of university was found for Functioning in Social Institutions ($F=3.30$, $df=4/94$, $p<.05$). Newman-Keuls tests showed that university M was superior to university Q ($p<.01$) and university M was superior to university Q ($p<.05$). A significant effect of university was found for Communicating ($F=6.75$, $df=4/94$, $p<.001$). Newman-Keuls tests yielded significant effects as follows: $M>Q$ ($p<.01$), $O>Q$ ($p<.01$), $N>Q$ ($p<.01$), and $M>P$ ($p<.05$). The only other subscale showing a significant effect of university was Problem Solving ($F=3.40$, $df=4/94$, $p<.05$). Only the superiority of M over Q was significant ($p<.05$) in Newman-Keuls tests.

Data concerning the attitude of nontraditional students toward the COMP tests were not formally gathered. The overwhelming consensus of the students as expressed at the luncheons was that this was the only test they had ever taken

³ Figures show percentile rank as compared to the norm reference group but all analyses were performed on raw scores.

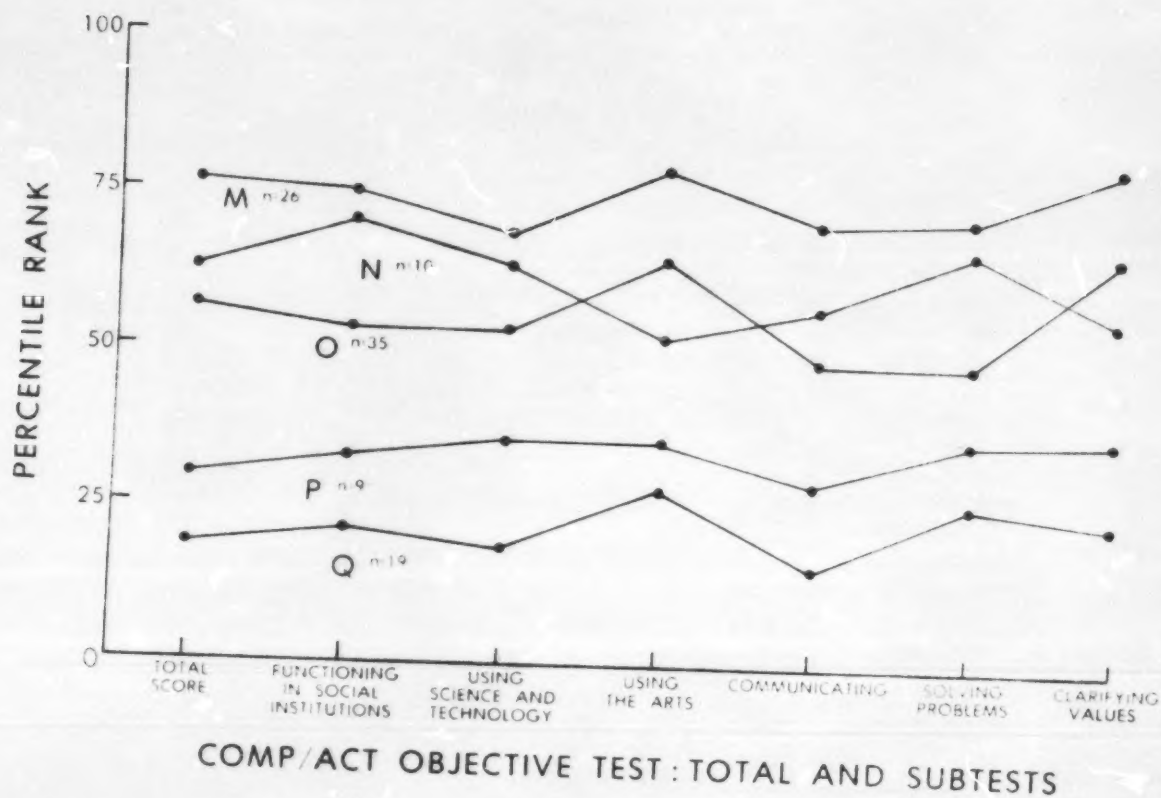


Figure 3. Mean percentile rank of nontraditional graduates from each of the five universities. Scores of 1,886 seniors from 30 colleges and universities form the norm reference group.

that they considered fair and relevant. These two adjectives were given time after time in describing the test. In addition the nontraditional graduates very often described the test as "fun" to take, or "very interesting".

Minority nontraditional graduates were asked their opinion as to the culture fairness of the test and they unanimously felt that it was more nearly culture fair than any test they had taken in their college training.

DISCUSSION

The results of the study were most helpful in answering the questions the study was designed to investigate. The COMP objective test has as high a reliability for nontraditional graduates as for traditional students. Through comparison with appropriate norm reference group scores nontraditional graduates were seen as about average when compared to traditional college seniors. The COMP total score and subscale scores were shown to be sensitive to program and school differences, at least to the extent that significant differences between programs and schools were detected. In addition, the nontraditional graduates perceived the COMP objective test as being appropriate for measuring their competencies and the competencies measured were seen as relevant to adult functioning. Finally, minority graduates perceived the test as culture fair.

The results of portions of this study would have been more easily interpreted had traditional seniors from the BOC universities been tested as controls. The norm reference sample is adequate but does not allow for direct comparison of traditional vs. nontraditional programs within a single institution. However, the results of this study do demonstrate that the COMP objective test is not biased against the nontraditional students. Some graduates from each university and each program had very high scores on all subscales.

It is clear that the various subtest areas allow a close inspection of possible deficiencies in a program. If graduates of a particular program continue to perform poorly on a particular subscale, strengthening of the program requirements in that area should show demonstrable effects on subscale scores.

Before meaningful comparisons of nontraditional programs between universities can be made, a much larger normative base for nontraditional graduates will be needed. It is possible that ACT will be able to provide this sort of base when more nontraditional programs have used the COMP test.

We were disappointed in that we were unable to address a question of considerable importance: Do nontraditional students gain as much or more than traditional students from their educational experiences? To answer this question would require either a test-retest design or a premeasure of abilities on a standardized test. Only 14 members of our COMP sample had taken the ACT or SAT prior to entering college. In most cases, students had graduated from high school before such tests were in general use. With no pre-college measure of ability we could not estimate gains. This means that nontraditional graduates who did relatively poorly on the COMP objective test may have actually gained more from their programs than did students who did well on the exam. This problem will cure itself in a few years as almost all students will have taken some form of standardized ability test before entering college. Future studies of COMP will undoubtedly address this problem by examining gain in COMP scores for nontraditional students.

A second problem that occurred in our use of the COMP test was a difficulty in securing volunteers to take the exam. Only 99 out of 1,116 persons contacted actually took the exam. This problem is largely due to the fact that nontraditional graduates are older and are more likely to have established families and other responsibilities than are traditional college seniors. These commitments make it difficult for them to give up three hours for an examination that will have no effect on their jobs or educational opportunities. This problem will undoubtedly occur in other attempts to use COMP as a measure of quality of graduates of nontraditional programs.

The nontraditional students examined in this study enjoyed the COMP test, saw it as fair and relevant, and performed at about the same level as traditional students. The COMP test may well be the best instrument now available for demonstrating the quality of the product of nontraditional post-secondary educational programs.

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